

REMARKS

Claims 15 to 86 are currently pending in the present application. Applicants again gratefully acknowledge the Examiner's indication that claims 21-28, 32-34, 37, 49, 59, 65 and 67 contain allowable subject matter. Claims 21, 26, 32-24, 37, 49, 59, 65 and 67 have accordingly been rewritten in independent form (claims 22-25, 27 and 28 depend from claims 21 and 26, respectively). Reconsideration of the patentability of the remaining pending claims is respectfully requested in view of the following discussion.

Claims 57, 60 and 61 have been rejected under 35 U.S.C. 102(b) as anticipated by Saleeba, "A self-contained dynamically reconfigurable processor", 2/1993, 16th Australian Computer Science Conference (hereinafter "Saleeba").

Initially, it is noted that to reject a claim under 35 U.S.C. § 102(b), the Office must demonstrate that each and every claim feature is identically described or contained in a single prior art reference. (*See Scripps Clinic & Research Foundation v. Genentech, Inc.*, 18 U.S.P.Q.2d 1001, 1010 (Fed. Cir. 1991))(emphasis added).

Claim 57, as amended, recites the feature that each OF the plurality of cells includes associated internal state information, and each of the plurality of cells is configured to transfer such internal state information to at least one other of the plurality of cells. While Saleeba briefly mentions the term "state machines" in passing, the reference uses this term merely to indicate the possibility of using a logic array to include state machine operation independently of the CPU (Central Processing Unit). Saleeba, pg. 64, first paragraph. This disclosure does not indicate (or even suggest) that such state machine operation includes the transfer of internal state information, associated with individual elements of a logic array, between and among the individual elements.

For at least this reason, it is submitted that Saleeba does not anticipate claim 57, or claims 60 and 61 which depend from claim 57.

Withdrawal of the rejection of claims 57, 60 and 61 under 35 U.S.C. 102(b) is, accordingly, respectfully requested.

Claims 62-64, 66 and 68 have been rejected under 35 U.S.C. 103(a) as unpatentable over Saleeba.

Independent claim 62, as amended, recites, *inter alia*, a first compiler receiving state information regarding a state of the first functional unit and transmitting reconfiguration data to the at least one of the cells as a function of the received state

information, wherein the state information includes information associated with an internal condition of the cells, and the state information transferrable between the cells.

In the Office Action, the Examiner admits that Saleeba does not disclose a compiler that receives state information regarding the state of a functional unit and transmits reconfiguration data to the functional unit as a function of the received state information, but goes on to assert that “it would have been obvious for one of ordinary skill in the art . . . to utilize Saleeba’s state machine to inform the compiler of the state of configured functional units because the state machine would provide the necessary information for reconfiguration during runtime within Saleeba’s system, which would improve performance of Saleeba’s system.”

Firstly, it is respectfully submitted that this reasoning is incorrect because at the time the invention was made state machines were used solely for the management of **internal states** of the functional units, and such state information was kept internal to the functional units. It is clear from the reconfiguration procedure described in Saleeba that taking what would be a novel approach of extracting such internal information is not contemplated since Saleeba envisions and prescribes an instruction stream model for configuring a logic array whereby a separate instruction unit provides reconfiguration instructions **without any input from the array itself**.¹

Secondly, Saleeba does not disclose or suggest that such internal state information is transferrable between the cells, or functional units, of a logic array. In fact, Saleeba is almost completely silent with respect to such internal state information, and no suggestions regarding the uses of such information can be reasonably derived from its scant disclosure.

For these reasons it is respectfully submitted that Saleeba does not render obvious the subject matter of independent claim 62, or its dependent claims 63, 64, 66 and 68.

Withdrawal of the rejection of claims 62-64, 66 and 68 under 35 U.S.C. 103(a) is, accordingly, respectfully requested.

Claims 15-20, 29-31, 35, 36, 38-48, 50-56, 79, and 82-86 have been rejected under 35 U.S.C. 103(a) as unpatentable over Schmidt et al., U.S. Patent No. 5,410,723 (“Schmidt”) in view of Saleeba.

¹ It is noted in this regard that the other reconfiguration models described in Saleeba – a configuration stream model, a community model and a “sea of logic” model – likewise do not describe accessing state information internal to functional units and modifying reconfiguration data based on such information.

It is initially noted that establishment of *prima facie* obviousness requires satisfaction of three separate criteria. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

Independent claim 15, as amended, recites that the plurality of computing cells includes associated internal state information, each of the plurality of computing cells being configured to enable transfer of the state information to at least one other of the plurality of computing cells.

As discussed above with respect to independent claim 62, Saleeda does not disclose this feature of claim 15. Moreover, Schmidt fails to cure the deficiencies of the Saleeda reference as it also fails to disclose or suggest this feature. In particular, while Schmidt refers to logic cells that each include an arithmetic logic unit which provides status signals such as an overflow or status signal (see Schmidt, col. 9, lines 18-25), it is clear that this status information is not transmitted out of the logic cell to adjacent cells in an array (for reconfiguration purposes or otherwise). Rather, in Schmidt, only data is transferred between cells (see Schmidt, col. 6, lines 6-42) – and this communication is performed for further processing of the data, and not for reconfiguration purposes.

In this regard, it would not have been obvious for the skilled practitioner to arrive at the claimed invention in view of the cited art (at the time the invention was made) because of the inherent challenges of communicating internal status information between cells of a logic array. Such communication requires resources such as buses or connection circuitry to be specifically allocated for the communication of such status information. Accordingly, this claimed feature is not a superficial modification which one of skill in the art would arrive at by consulting the cited art.

It is therefore respectfully submitted that the combination of Saleeda and Schmidt does not render obvious the subject matter of claim 15, or its dependent claims 16-20, 29-31, 79, 82 and 83.

As independent claims 35, 47, and 86 recite subject matter analogous to that of claim 15, it is submitted these claims and their dependent claims 36, 38-46, 48, 50-56,

84 and 85 are likewise not rendered obvious by the combination of Saleeda and Schmidt.

Withdrawal of the rejection of claims 15-20, 29-31, 35, 36, 38-48, 50-56, 79, and 82-86 under 35 U.S.C. 103(a) is, accordingly, respectfully requested.

Claim 58 have been rejected under 35 U.S.C. 103(a) as unpatentable over Saleeba in view of Schmidt.

Claim 58 depends from and incorporates the features of claim 57, which recites that each the plurality of cells includes associated internal state information, and each of the plurality of cells is configured to transfer such internal state information to at least one other of the plurality of cells. As discussed above, it is respectfully submitted that the combination of Saleeda and Schmidt does not render obvious this subject matter. Accordingly, withdrawal of the rejection of claim 58 under 35 U.S.C. 103(a) is respectfully requested.

CONCLUSION

All issues having been addressed, it is believed that the present application is in condition for allowance. Prompt reconsideration and allowance of the present application are respectfully requested.

Respectfully submitted,

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